

Stormwater Activity Book

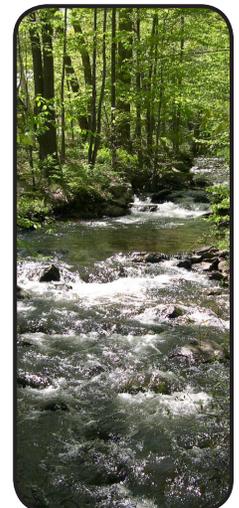


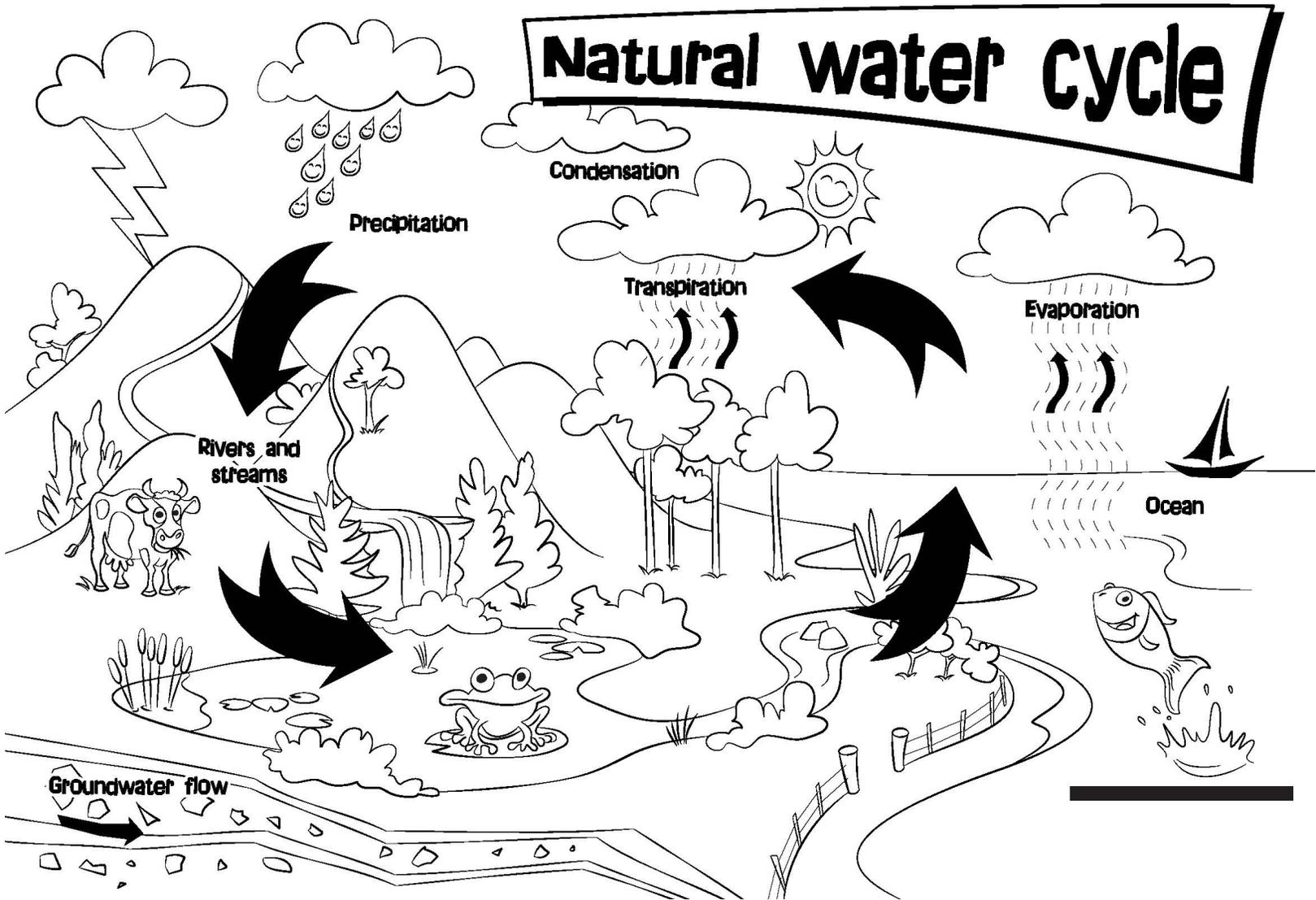
What is Stormwater?

When rain falls or when the snow melts in Massachusetts, where do you think the water goes? Does it soak into the ground? Does it sit in puddles until it disappears? If you answered yes, you are partially right. Some of the water flows over the land surface, heading downhill to the nearest stream or ditch.

We call this stormwater runoff.

In cities and towns, the water can't soak through the pavement, rooftops, and concrete. This means that there's more stormwater runoff in cities than in forests and fields. The water collects in gutters and usually flows straight into a storm drain. You would recognize a storm drain as the big grate in the road where the water disappears. Actually, it connects to a pipe, which carries the water directly to your local stream or lake.





Solar Energy

Energy provided by the sun for the never-ending water cycle.

Evaporation

Vapor created when the sun heats water in lakes, streams, rivers and oceans.

Transpiration

Vapor created when plants and trees give off moisture.

Condensation

Tiny droplets of water formed when water vapor rises into the air and cools.

Precipitation

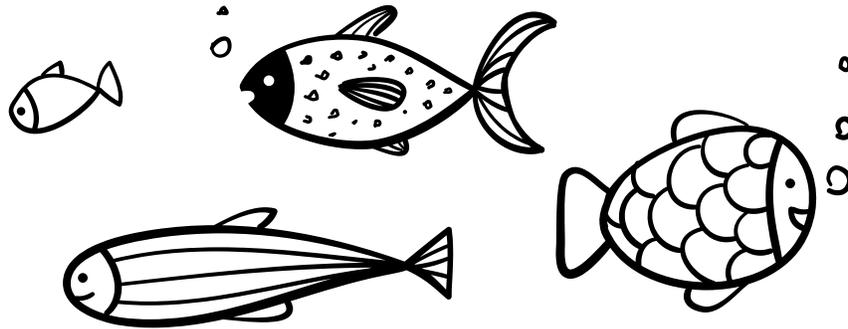
Moisture released when clouds become heavy and form rain, snow, and hail.

Percolation

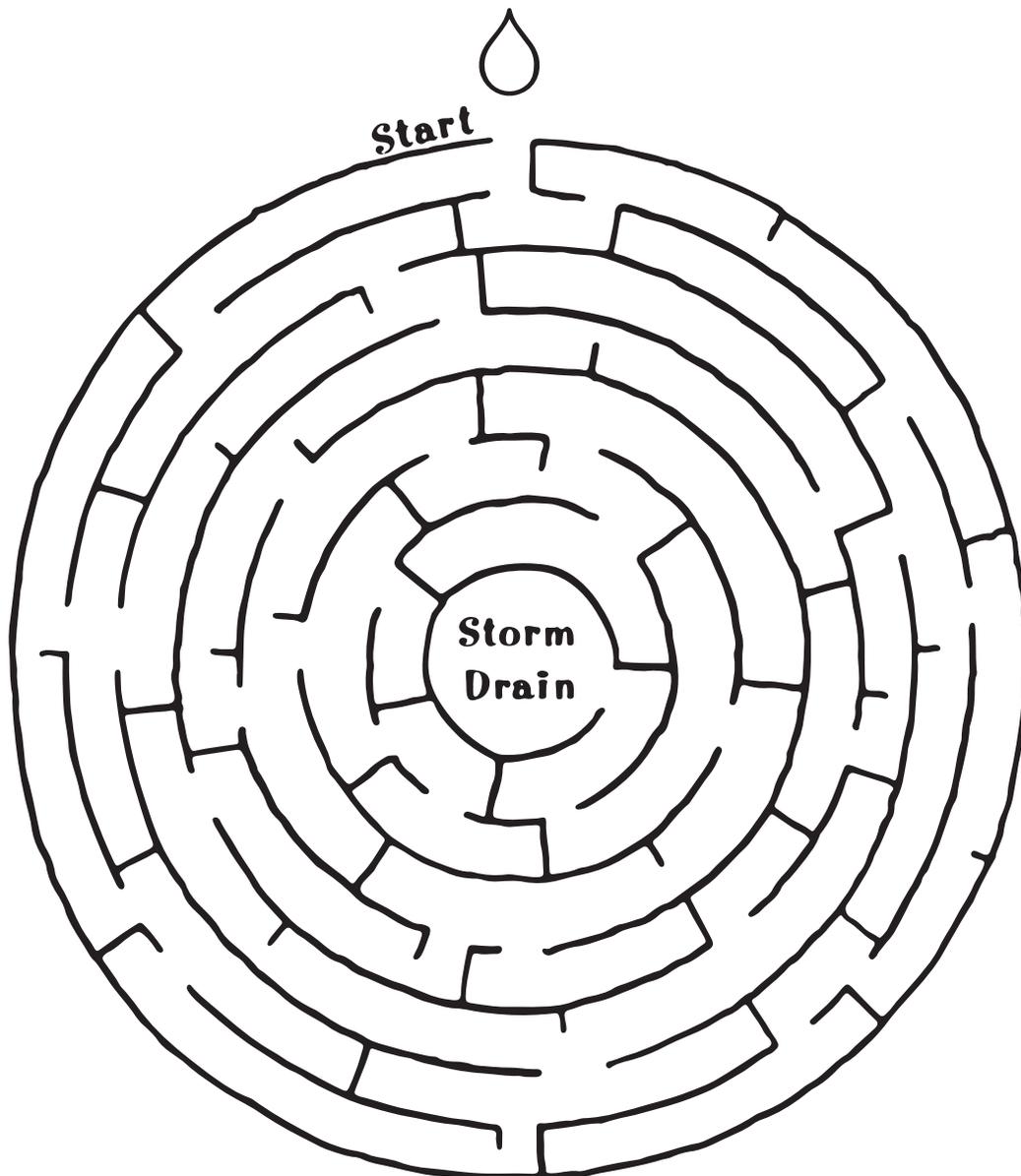
Movement of water through the ground.



Cities and towns have more stormwater runoff than areas in the country because they have more concrete so the water can't soak into the ground.

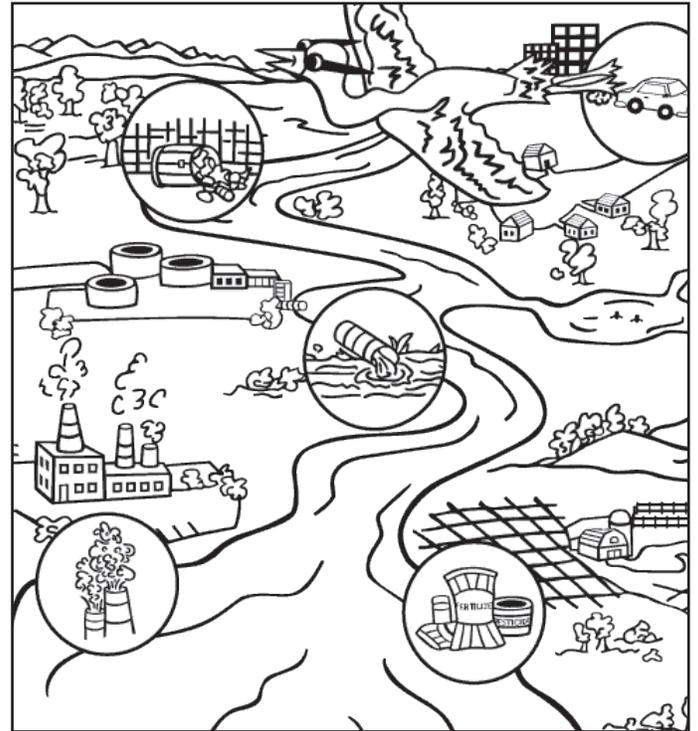


Lead the water droplet through the maze and into the storm drain.



Often we think that water pollution only comes from big oil spills or huge factories. We forget that there are lots of little sources of pollution all around us.

Stormwater from cities can become very polluted. Oil drips on driveways, fertilizers on lawns, loose dirt in areas with no plants, or dog poop can all be carried by stormwater to a drain and on to a lake or stream.

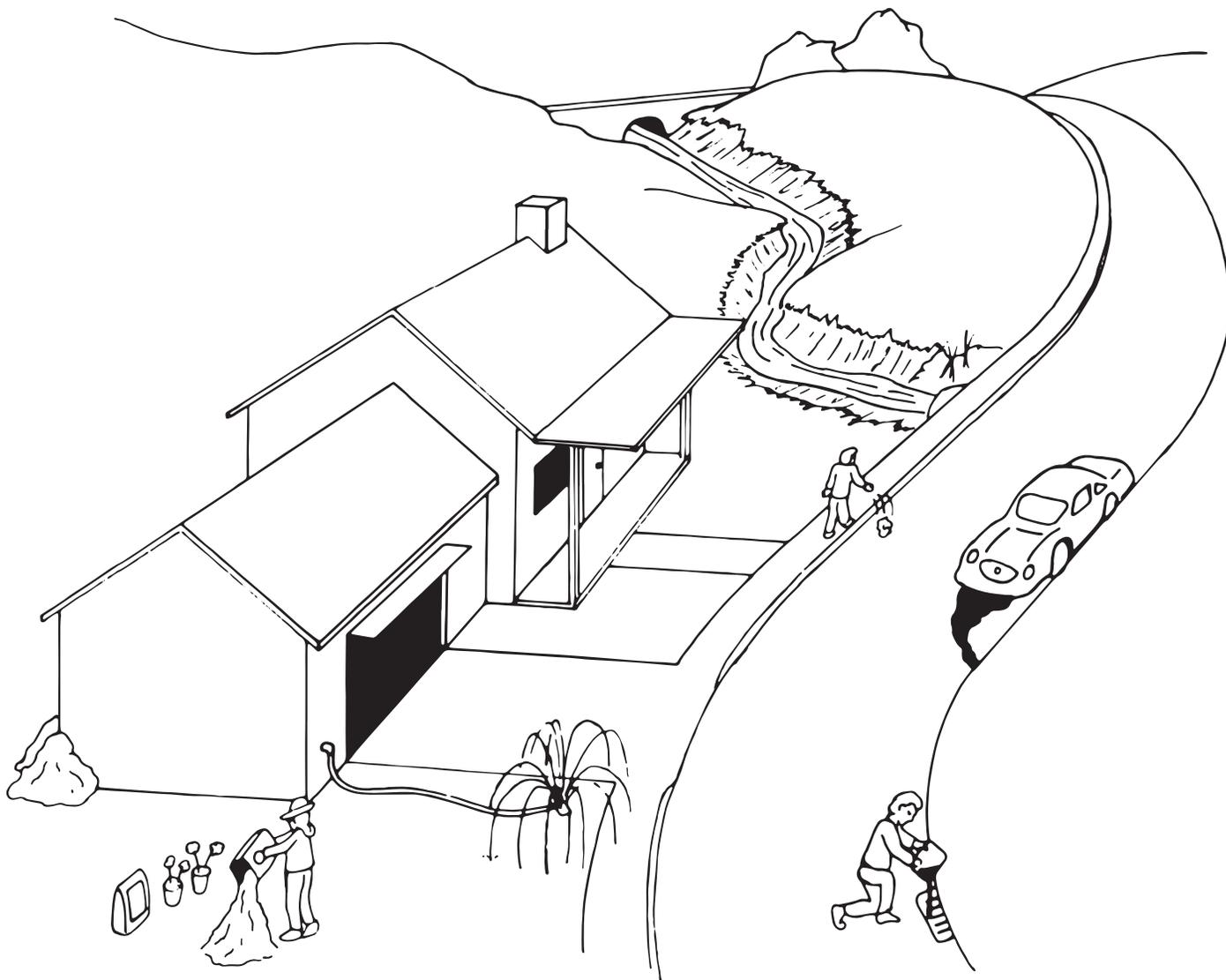


- Concrete
- Drain
- Driveway
- Fertilizers
- Lawn
- Oil
- Pesticides
- Plants Rain
- Rooftops
- Sediment
- Stormwater
- Stream

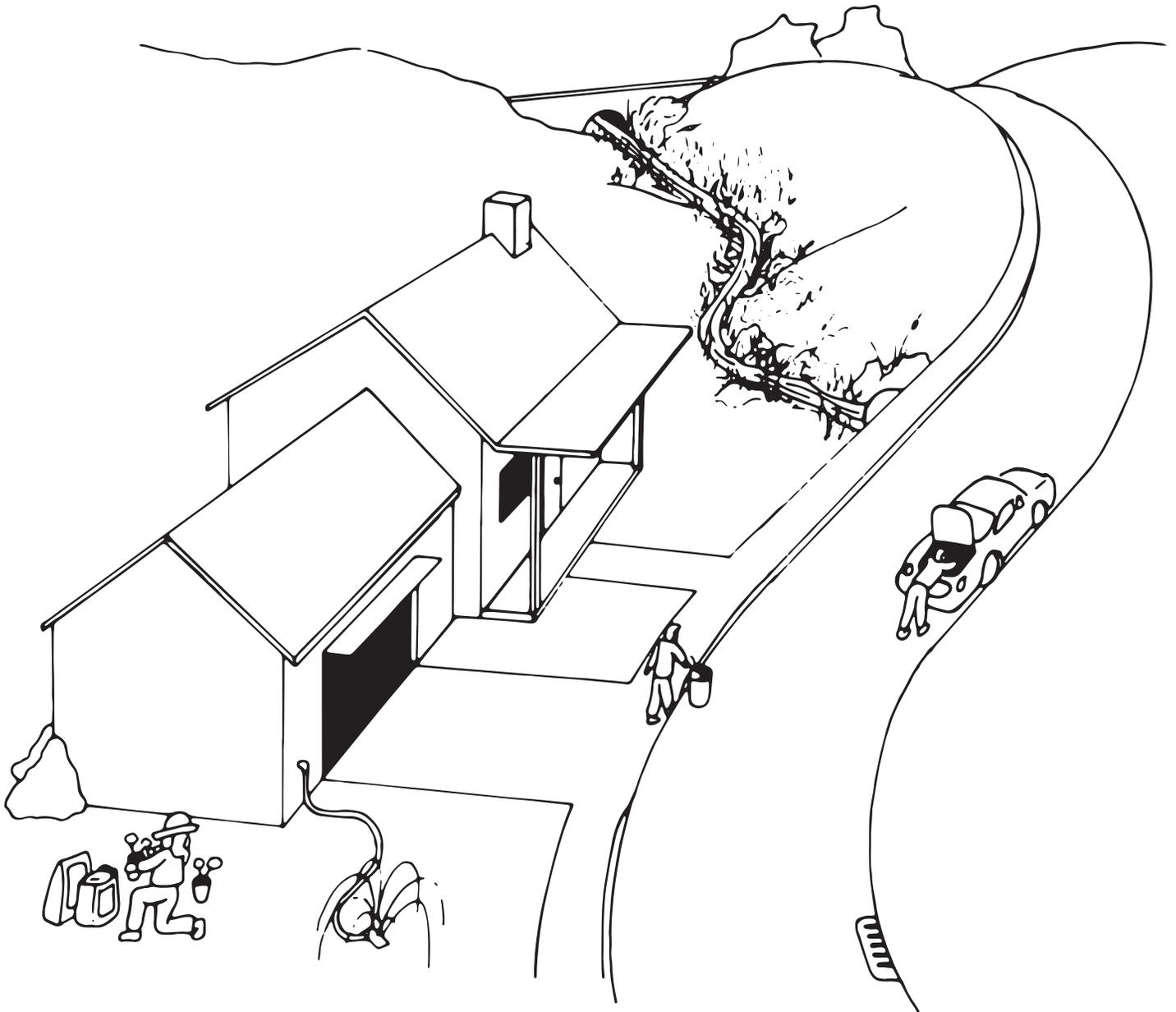
C	K	R	E	S	W	N	M	G	V	N	E	N	P	B
Y	B	E	O	Y	E	E	I	T	L	T	I	L	K	B
O	B	T	D	O	E	D	M	A	E	S	A	J	K	L
J	F	A	P	V	F	O	I	R	R	N	S	D	Q	G
O	Z	W	X	A	P	T	C	C	T	D	E	S	R	Z
L	A	M	W	C	Y	N	O	S	I	F	K	K	Q	S
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N	D	T	M	A	E	R	T	S	T	M	S	E	G	I
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Z	N	J	A	Y	H	V	M	B	N	I	N	T	R	N
Q	W	R	Z	G	R	N	O	E	A	Y	P	E	K	T
K	A	E	S	Y	L	N	T	R	B	T	S	X	N	Q
F	L	X	D	L	N	M	I	C	V	V	M	H	N	C

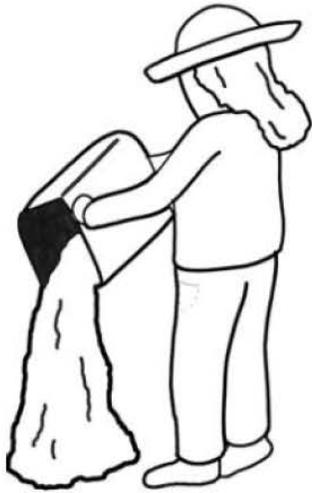
Can you Spot all of the Differences?

Compare the picture on this page with the picture on the next page. Circle all the differences between them. **You should find 6 things.**



What do these differences have to do with protecting our water from stormwater runoff? **Look at the next 6 pages to find out!**





Oops!

This woman is dumping fertilizer or pesticides directly on her lawn.



This is better!

Only use as much fertilizer or pesticide as you need and be careful not to spill.

Remember:

- Fertilizers can help our lawns become nice and green. But, when they wash into lakes and streams, they can pollute the water and use up oxygen that fish need.
- Pesticides keep harmful insects from damaging lawns and gardens, but if they wash into our lakes and streams they'll kill the fish and other critters that live there.

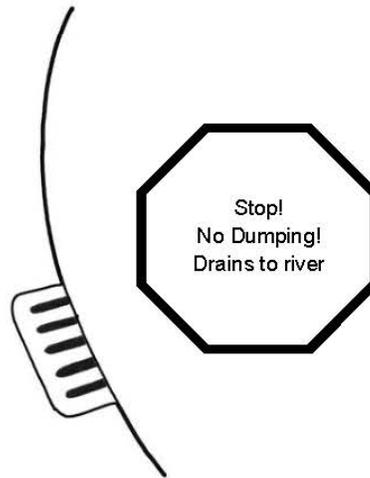
Draw a picture of your favorite fish or another cool water animal.





Oops!

This man is dumping chemicals down the storm drain.

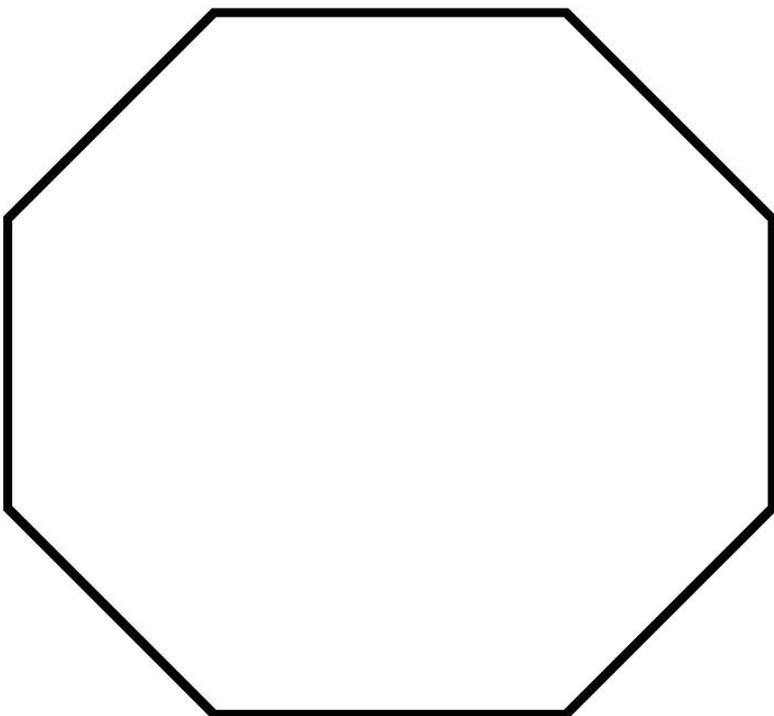


This is better!

Never put something down a drain that you think might hurt a fish.

Remember:

- Encourage your parents to only buy as much cleaner and paint as they need. Substitute less poisonous products when you can.
- Always dispose of hazardous waste like used motor oil, antifreeze, cleaners and paints properly. Check for hazardous waste disposal days in your community.



Who cares?

Remember that storm drains often go straight to a stream or lake. You can help by reminding others not to dump anything down these drains.

Draw a picture in this sign that reminds people why they shouldn't dump wastes into a storm drain.



Oops!

Don't be a litterbug!



This is better!

Always dispose of trash in a proper container (or pocket the trash until you find one).

Remember:

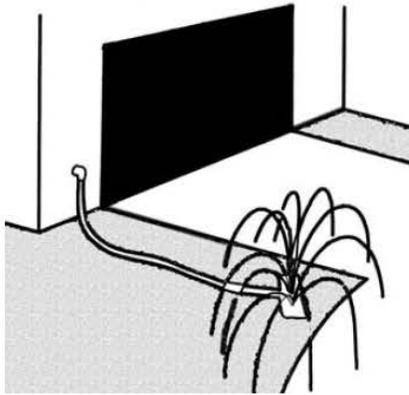
- Stormwater washes trash into streams and lakes. Fish and animals that live near lakes and streams can mistake plastic trash for food. If they eat too much trash, they might starve!

What can you do?

Make a list of some things YOU and your friends can do to reduce trash.

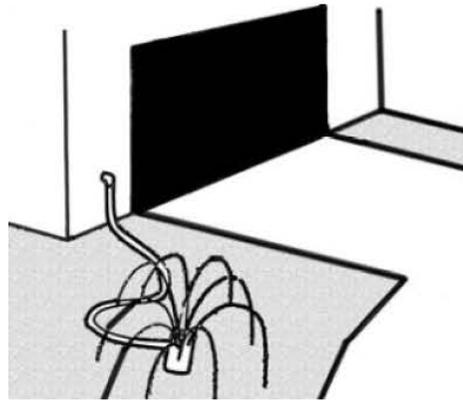
(How about a clean up day with scouts, or a recycling day at your school?)

<hr/>



Oops!

Don't water the driveway or the sidewalk.



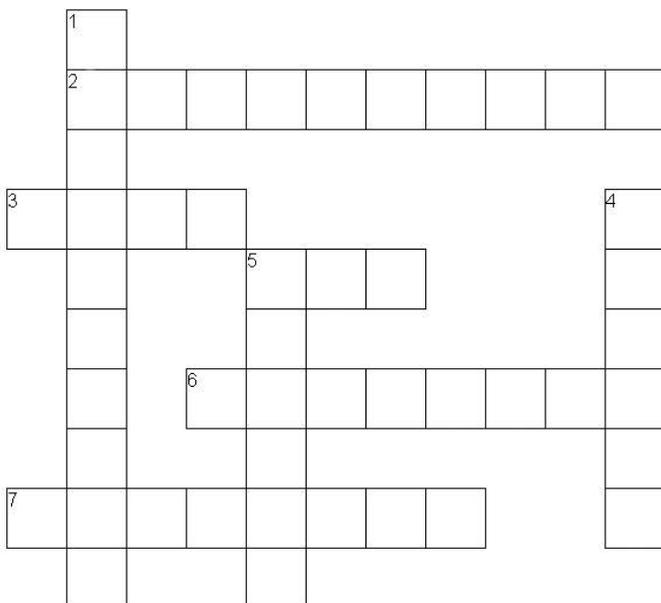
This is better!

The water that lands on a driveway or sidewalk doesn't help your lawn, and ALSO washes pollutants into storm drains.

Remember:

- Place sprinklers so that the water lands only on the lawn.
- Water the lawn or garden during the cooler times of day.
- Don't water on windy days. The water may blow away and be wasted.
- Try to wash your car (or even your dog!), on your lawn or someplace that doesn't run straight into the street.

Do this crossword puzzle about water conservation!



Across

- 2) Can wash into storm drains and streams from the driveway
- 3) Can blow away water while sprinkling
- 5) Wash this on the grass
- 6) Do this because we live in a dry state
- 7) Water that lands on this does not help your lawn

Down

- 1) Only water lawns, not driveways, with these
- 4) Water can carry pollutants here
- 5) Water only in this part of the day



Oops!

Oil that drips from cars can wash straight into our lakes and streams.



Fix Those Leaks!

Oil and antifreeze make our cars run well, but leaks can be very dangerous to fish, birds and even cats and dogs!

Another Use for Cat Litter!

- Did you know that cat litter absorbs leaks from cars really well? Spread it on the ground over the leak, let the oil and junk soak up, then sweep up the cat litter.
- Remember to dispose of the cat litter properly (with your household garbage.)

Unscramble the words below:
Hint- they are all found on this page!

1. iol _____

2. dsrpi _____

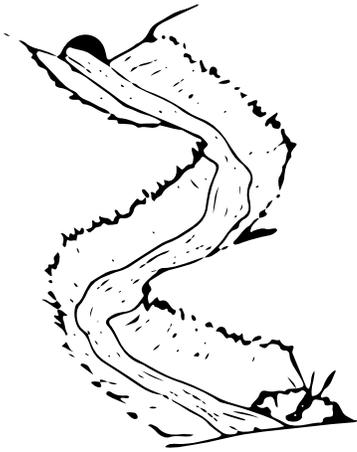
3. zifnreeeat _____

4. abgager _____

5. klsae _____

6. csra _____

7. samter _____



Oops!

The bare banks let dirt wash straight into the stream. This can cloud the water and smother fish eggs.

This is better!

A few plants go a long way. The roots keep the bank from eroding. Plus, the plants look nice!

How can you help?

- Help your community plant trees or leave native grasses and shrubs along a stream bank to reduce erosion.
- Walk only along existing trails when near water.

Solve the hidden message! Use the clues below.

=A	=R	=D	=E
=P	=M	=L	=K
=F	=U	=T	=S
=I	=N	=H	=O

H _____

Word Search

Can you find the words below in the word search?



Pollution	Stream	Recycle	Barrel	Flowers
Drink	Water	Grass	Birds	Lake
Safe	Rain	Trees	Pipes	Filter



Visit westminster-ma.gov/stormwater-management
Click on the "Stormwater Pollution Prevention for Kids" tab for
additional activity pages and information.

Picnic Pick-Up

Much of Westminster's open space and outdoors is the perfect place to have a picnic. We can all keep it clean and prevent polluted stormwater if we pick up after our picnics. **Help clean up the 10 forgotten items.**



Connect the dots to see who came to help pick up the leftovers.

Here's a few clues:

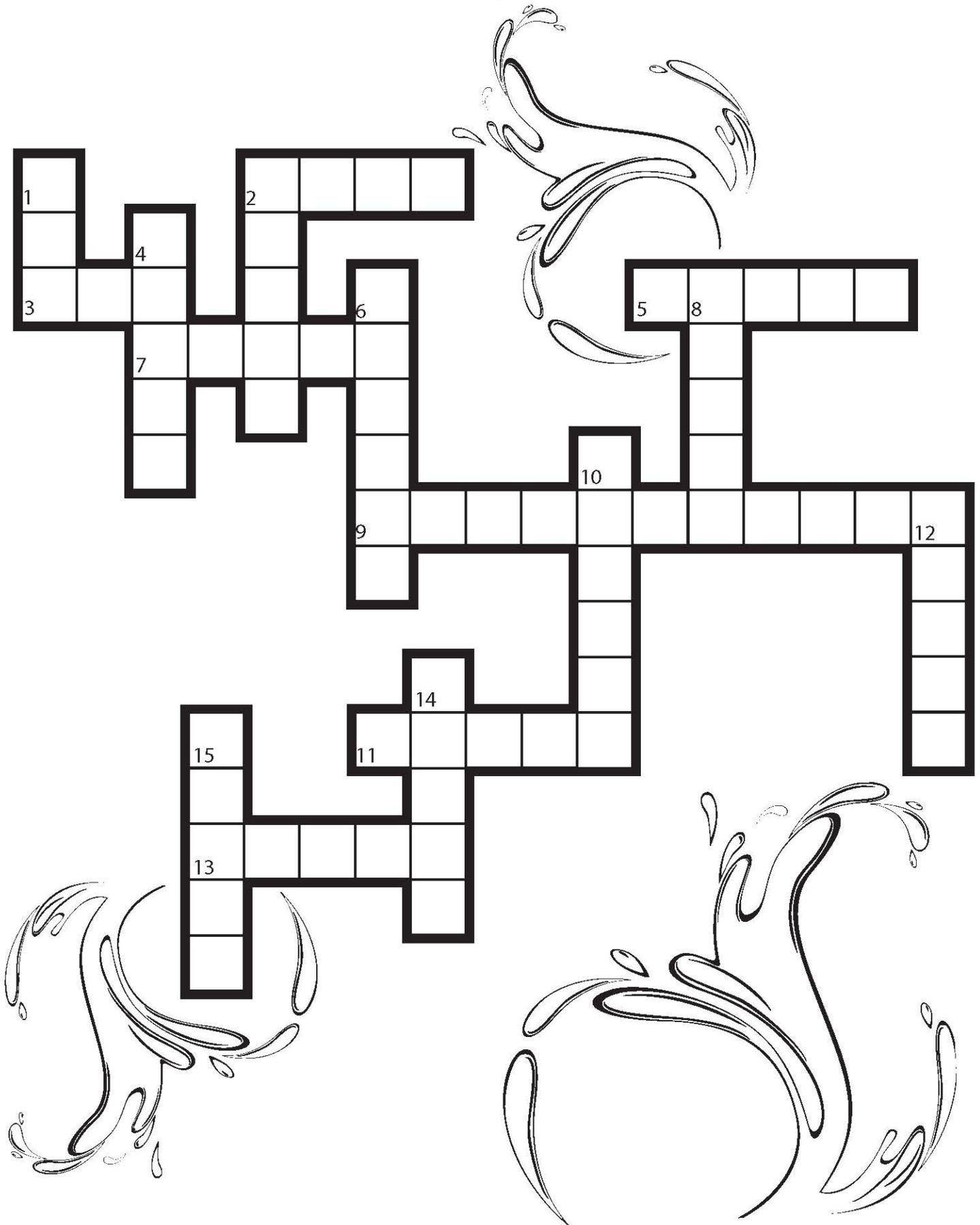
- 1) He likes to wash his food in the river when the water is clean.
- 2) I live in many different forests throughout Massachusetts.
- 2) I am a **R** _____.



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Crossword Puzzle

Test your water knowledge and finish the puzzle!

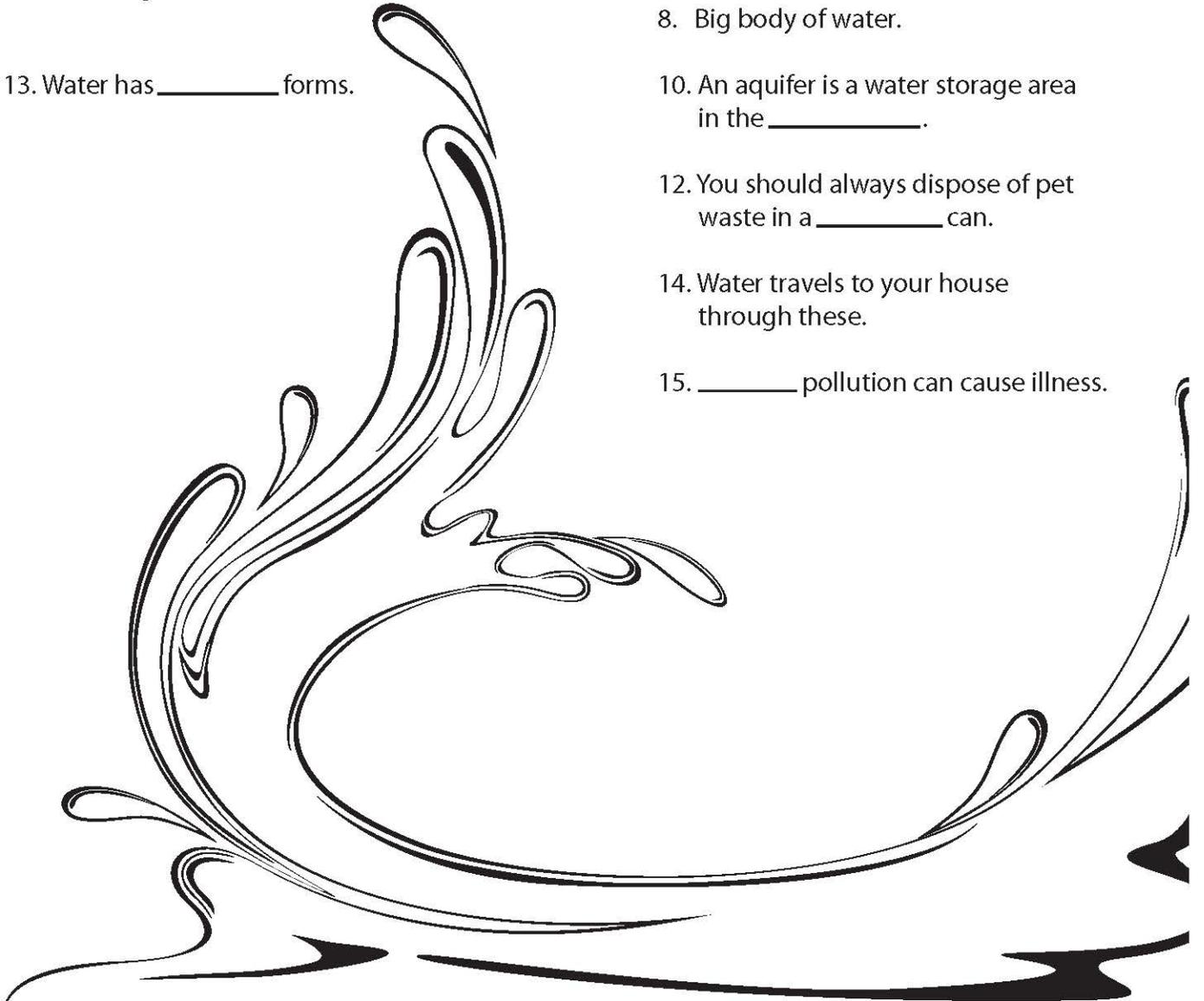


ACROSS

2. People go to the pool to _____.
3. Snake-like fish.
5. _____ O! Water.
7. Keep _____ Beautiful.
9. Recycling and conservation helps protect the _____.
11. If you have a leaky faucet, tell an adult to get it _____.
13. Water has _____ forms.

DOWN

1. This is added to water to make it cold.
2. When you boil water, _____ rises out of the pot.
4. When water evaporates, it travels into the air and can turn into a _____.
6. Use a rain _____ to conserve water.
8. Big body of water.
10. An aquifer is a water storage area in the _____.
12. You should always dispose of pet waste in a _____ can.
14. Water travels to your house through these.
15. _____ pollution can cause illness.



Follow the Lines

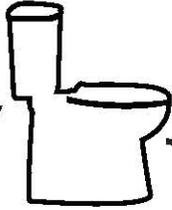
Find fun facts about water and water conservation!

How much of the earth is covered in fresh water that we can use?



Save up to 45 Gallons of water!

How many gallons of water can you save by fixing a leaky toilet?



3



How many gallons of water can you save in a month by turning the water off while you brush your teeth?

200 Gallons of water per day!



Take a shower instead of a bath and ...

400 Gallons

How much water does a family of 4 use per day?



1%

How many forms does water come in?

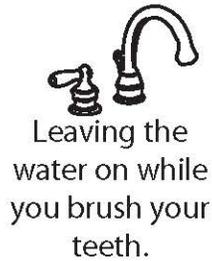
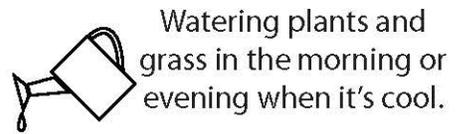


Enough to fill a fish tank big enough to hold 6 small sharks

Draw a Line

to “water saver” if the action saves water or
to “water waster” if the action wastes water.

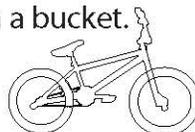
Washing the sidewalk
off with the hose.



Taking a quick
shower.



Washing your
bike or your
parent's car
with a bucket.



Shutting water
off while you
brush your
teeth.



Help STOP Stormwater Pollution



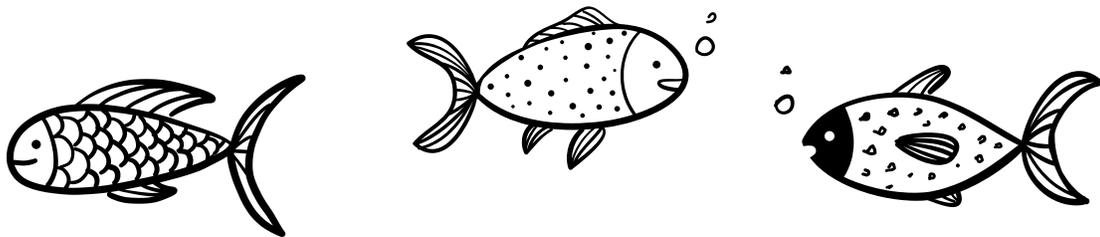
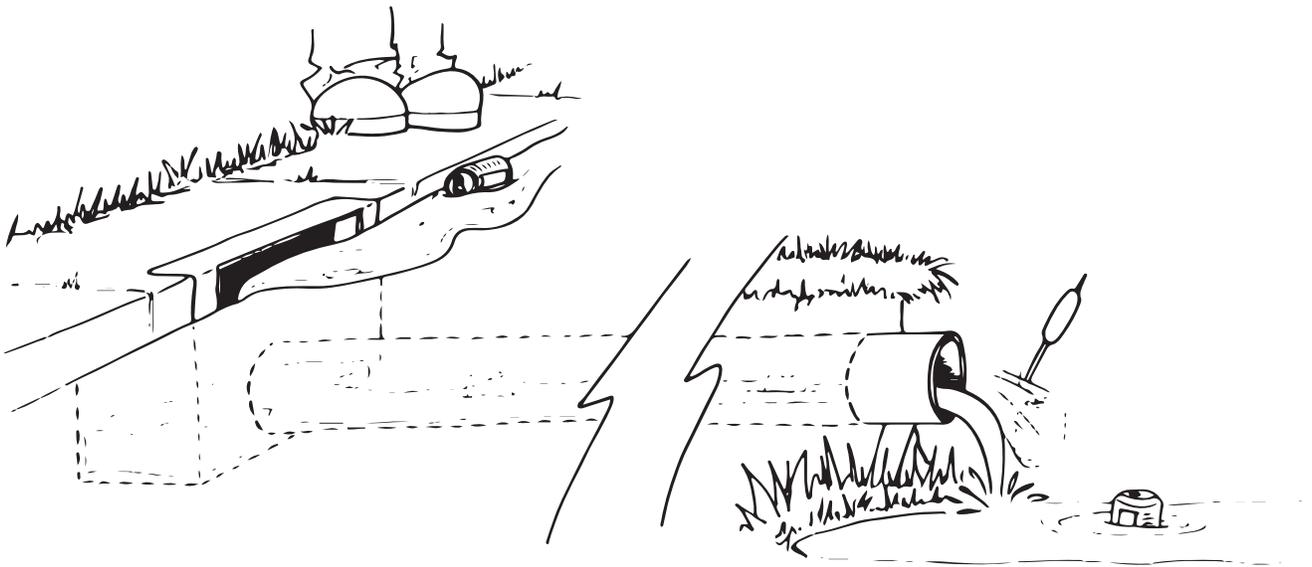
Fish and other animals need clean water to survive.

Did you know that pollution that enters storm drains goes straight to our streams, rivers and the bay? Keep soap, oil, dirt, fertilizer, trash, and other pollutants out of storm drains.



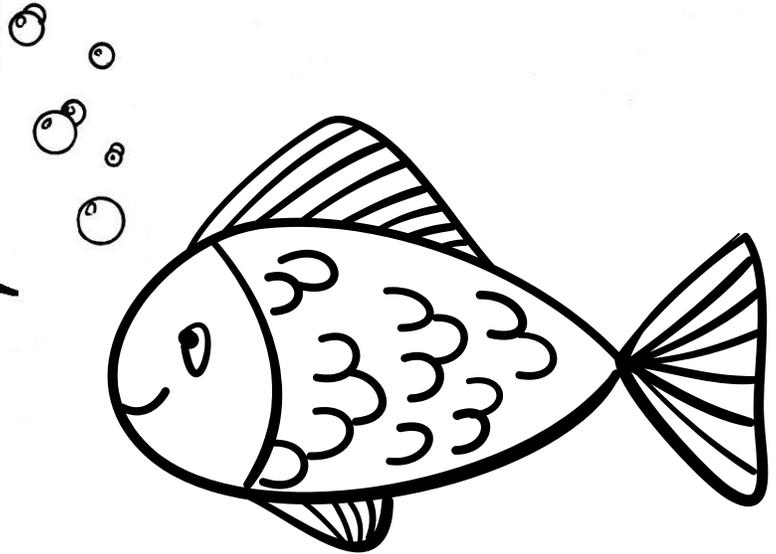
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Sometimes, people pour pollutants right into our water! This happens every time they put something down a storm drain.



A storm drain is a connection between the street and our water.

Unscramble
the words to
find the
pollutant.



silo _____

This washes off of bare spots in your yard. It hurts my gills and covers my home with mud.

lio ____

This drips out of the bottom of your car. One quart of this can pollute one million gallons of my water.

trilet _____

If this is left lying on the ground, the rain can wash it into my water.

tep stawe ____ _____

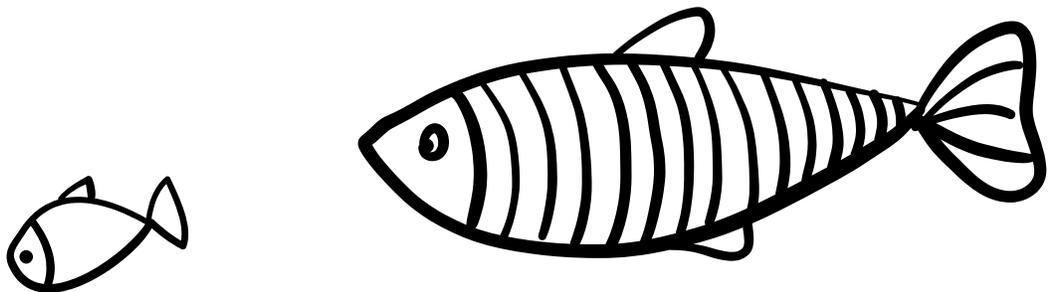
If you don't clean up after your pet, this can make my water unfit to live in!

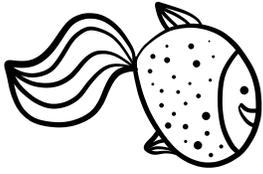
m achicles _____

Using lots of these to kill insects in your yard lets them wash off and harm animals in the water - like me.

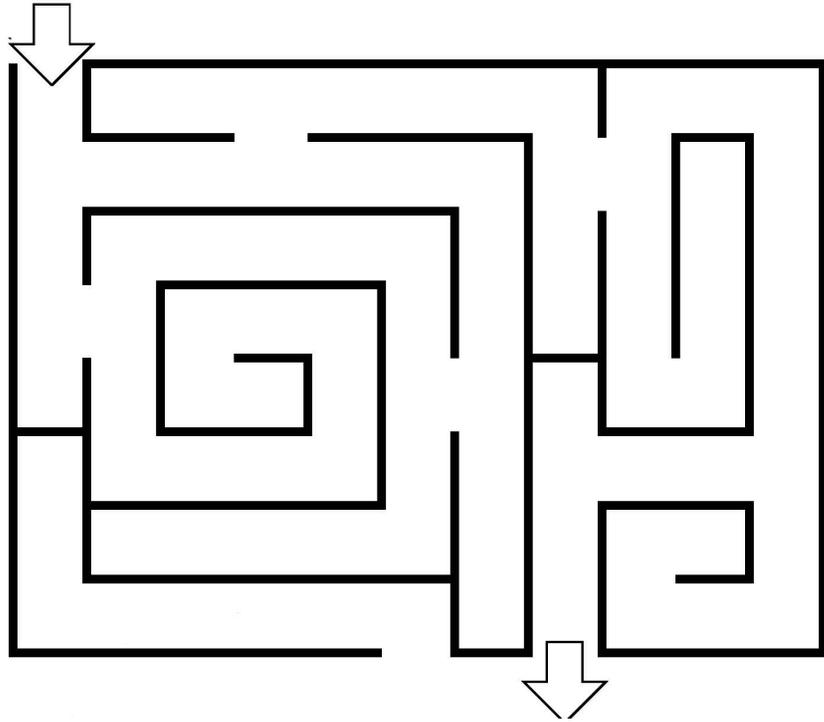
spadosus _____

The car might be clean, but they pollute my water.





Help the fish find his way
to where the water is clean.



Here are ways YOU can Help Prevent Polluted Stormwater Runoff



Minimize the use of pesticides and herbicides.

Compost yard waste like leaves, weeds, and grass clippings. Don't rake them to the curb or dump them in ditches or waterways.

Check car for leaks and recycle used motor oil. Never pour it on the ground or into a storm drain.

Direct downspouts away from paved surfaces onto the lawn or into a rain garden.

Plant grass or plants on the bare spots in your yard.

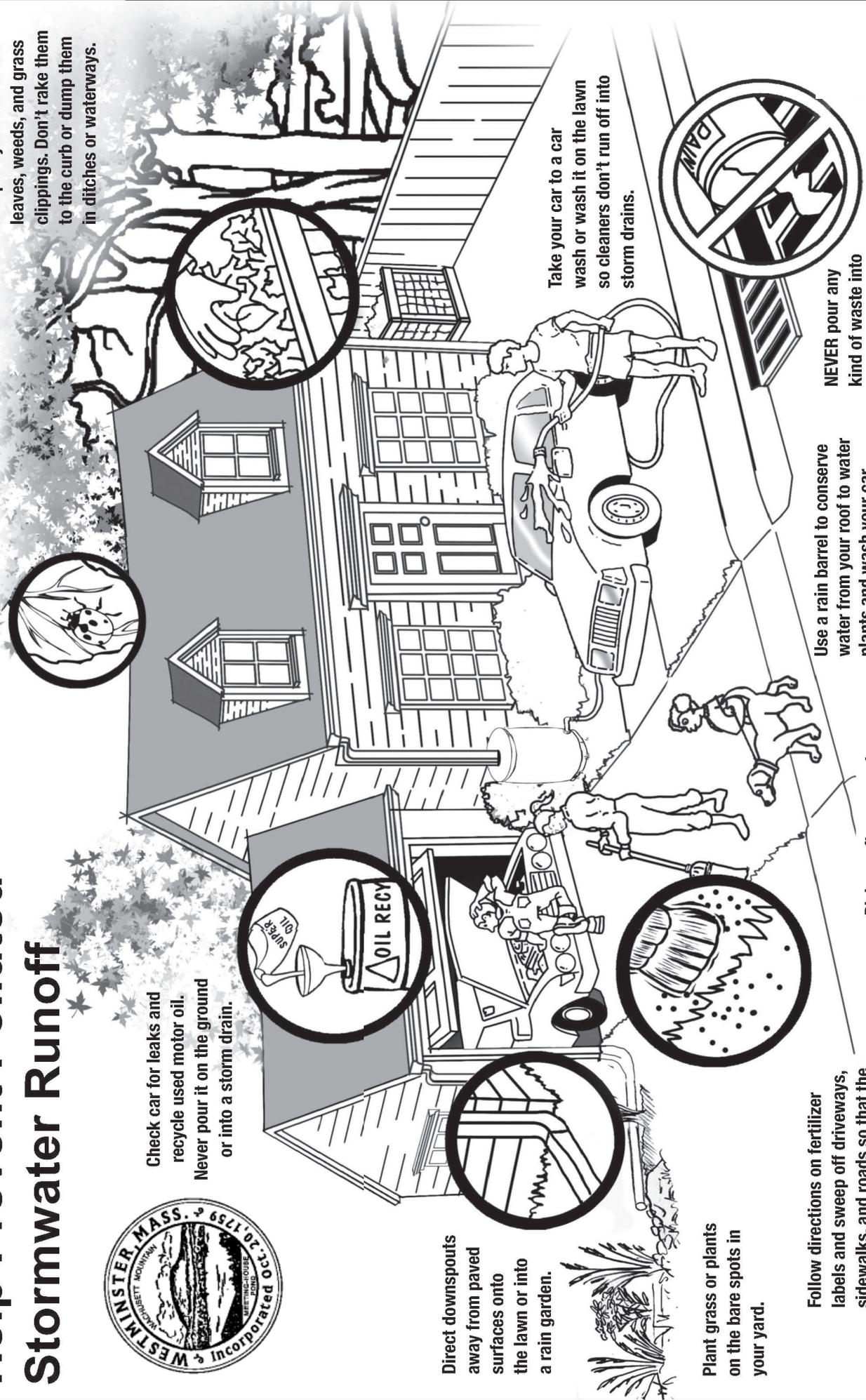
Follow directions on fertilizer labels and sweep off driveways, sidewalks, and roads so that the chemicals won't get washed into storm drains.

Pick up after your pet. Don't let pet waste wash into storm drains.

Use a rain barrel to conserve water from your roof to water plants and wash your car.

Take your car to a car wash or wash it on the lawn so cleaners don't run off into storm drains.

NEVER pour any kind of waste into storm drains.



Certificate

Congratulations! You have completed your *Stormwater Activity Booklet*. You are now an expert on detecting and preventing stormwater pollution. Be sure to tell your parents, friends, and neighbors what you have learned. Everyone needs to help protect the water that we all need.

I, _____, have completed this activity
(*Sign your name here*)

book and will protect the water around me by not wasting water, not dumping anything into a storm drain, and by telling people about the dangers of stormwater pollution.

